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ASPECTS OF TREATMENT*

The vagus nerves as seen in highly selective vagotomy

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Introduction

Medical illustrations of the vagus nerves in the abdomen give an impression that artists provide two main interpretations, one conspicuously thick, the other realistically thinner. Either may appear in relatively straight or crab-like form [1-6]. Whether the 'crow's foot' description in current use or an intentional emphasis on what part of the nerve is important in the drawing has generated the thickened version seems problematical, but it does not correlate easily with what I think I see in the patient during a highly selective vagotomy operation.

Accounts of the procedure vary both in regard to the sequence of events and the mode of ensuring the survival of the nerves of Latarjet. Yet while there must be several good ways of accomplishing the operation, it would appear useful for a surgeon to give an account of his usual routine by personal illustration of the nerves he sees, imperfect as his observations may be.

Basis

1) The two nerves of Latarjet are fine nerves and merit an approach other than one that is seemingly only a simple detachment of the lesser omentum from the stomach.

2) A start is made in the area near the most delicate, pyloric, end of the two nerves.

3) At the oesophageal end both main nerves should be identified very much as in truncal vagotomy[7], but without as much upward separation from the oesophageal wall. A complete oesophageal clearance is still the aim, though over a lower, narrower band of gut.

Operative appearances

The simplified Figures 1–7 show the sequence of events as I came to do the operation over my first 66 cases and contain an interpretation of how the nerves appear to myself in the average case with the common nerve pattern. Figure 8 includes the most frequent varia-

FIGS. 1–7 *Successive presentations of the vagal nerves during highly selective vagotomy.*

1) *Stay sutures of relatively thick* 00 *catgut put between nerve and lesser curvature protect the delicate Latarjet strands after identification.*
The lower dissection:

2) *Deals with anterior leaf of lesser omentum and proceeds into lesser sac through gastrocolic omentum.*

3) *Severs posterior leaf of lesser omentum at the back.*

4) *Ends in the break-through from lesser to greater sacs and a return to anterior working.*
The middle dissection:

5) *Continues upwards to near the oesophagus and can culminate in inserting a catheter as oesophageal sling, if desired.*
The upper dissection:

6) *Identifies the two main trunks, including that decisive part of the posterior trunk below its coeliac ganglion branch.*

7) *Divides the nerves appropriately and clears residual nerve fibres from the lower oesophagus before the final check, bearing in mind the common nerve pattern* (8).

FIG. 8 *Diagrammatic distribution patterns of vagal nerves in the gastric area.*

Based on a paper given at the Burnley meeting of the Manchester Regional Association of Surgeons in May 1974.

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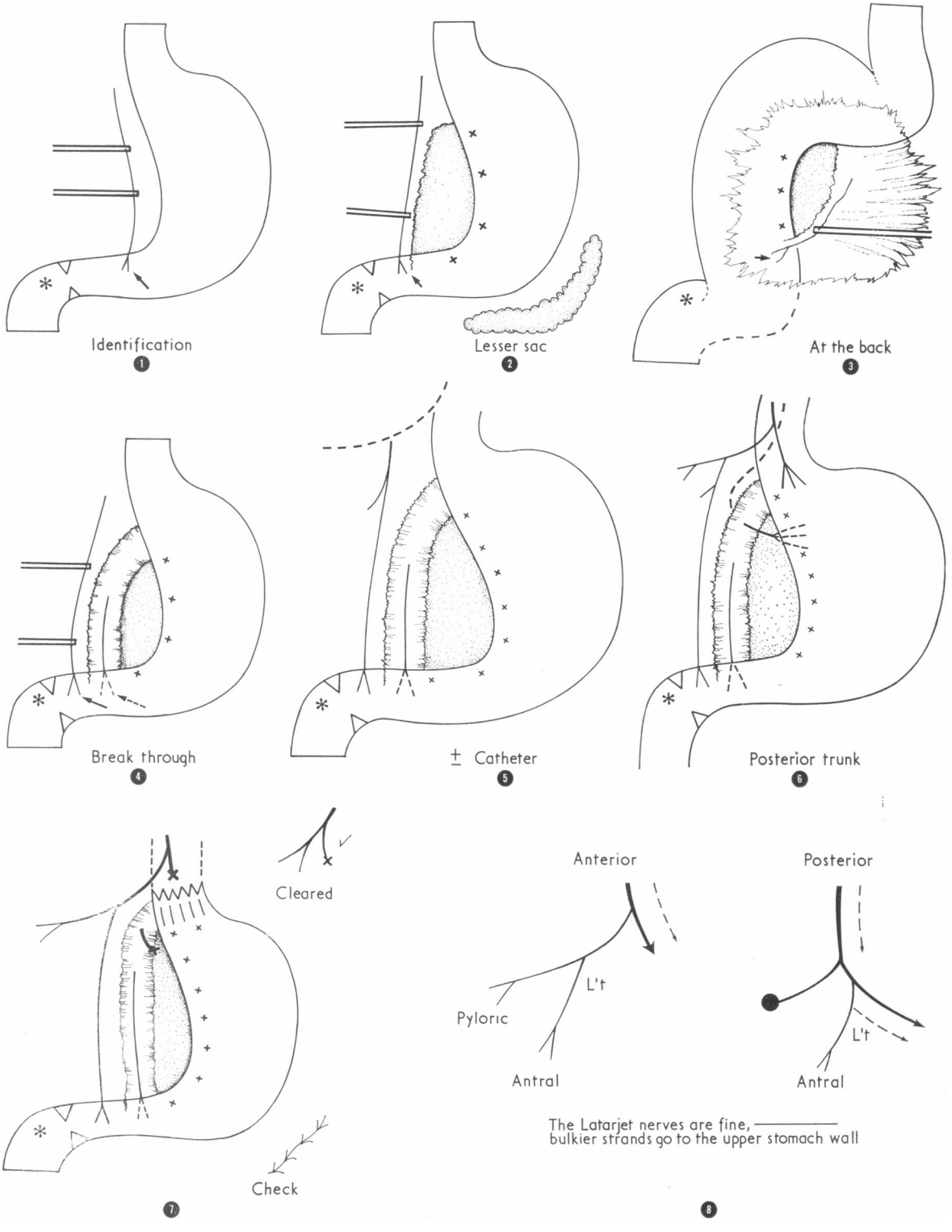
Identification
1
Lesser sac
2
At the back
3
Break through
4
± Catheter
5
Posterior trunk
6
Cleared
Check
7
Anterior
Posterior
L't
Pyloric
Antral
L't
Antral
The Latarjet nerves are fine, ————
bulkier strands go to the upper stomach wall
8

tions—double anterior or posterior main strands running to the upper stomach.

The 'breakthrough' from lesser to greater sacs (Fig. 4) and the identification of the main continuation of the posterior trunk (Fig. 6) each marks an important stage in the procedure.

Distortions and displacements caused by the mechanics of operation, however slight, govern what the nerve patterns finally present for the surgeon's eye to see.

Discussion

If the lower ends of the nerves of Latarjet may be considered delicate and easily damaged, like the facial nerve strands in the parotid, in the upper reaches of the vagus the various junctions with the heavier main trunks are in a category similar to that of the meeting point of the cystic and common bile ducts and need the same precise identification. Between the lower and upper ends only a clear sight of the nerves both at the back and in the front can prevent damage by the ordinary methods of dissection and vessel ligation. Adhesions in the lesser sac, so common, appear to make it essential to see the posterior Latarjet nerve from inside the sac (that is, from behind) to ensure its survival.

In all the dissection vigorous, sweeping manoeuvres which might apparently favour complete vagotomy may militate against the survival of the Latarjet nerves, as will exuberant application of the diathermy. In the event an over-energetic highly selective vagotomy may end anatomically as only selective. On the other hand some nerve patterns could mean that a neat selective operation would end as an anatomical highly selective one and an occasional truncal vagotomy as hemiselective—with a possible relevance to the results.

The nerve division most easily missed in a difficult case, and perhaps also the single most decisive strand severed, is the relatively thick continuation of the posterior nerve running towards the upper posterior surface of the stomach obliquely from right to left below the points of separation of the coeliac and Latarjet branches (Figs 6 and 8).

Most theatre personnel appear to feel that highly selective vagotomy is a laborious operation, but detailed care and adequate time remain essential to accuracy in the procedure.

My own drawings were photographed by Mr Brent Taylor at the Burnley General Hospital and afterwards suitably redrawn by Mr Stewart Ganley, educational technologist in the Professorial Surgical Unit at Charing Cross Hospital. My thanks are due to both and also to the Editor (Professor Harding Rains) for his wholehearted and kindly help.

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